

Claims:

- 12.(new) Filter device for molten steel filtration comprising a bonded network of graphitized carbon, the filter device comprising a protruding frame joining a plurality of sieve plates, each plate including a corrugated surface, the protruding frame and sieve plates defining a reservoir chamber.
- 13.(new) The filter device of claim 12, wherein at least one corrugated surface includes a surface corrugation from 0.1-10 mm.
- 14.(new) The filter device of claim 13, wherein the surface corrugation is from 1-5 mm.
- 15.(new) The filter device of claim 12, wherein each sieve plate defines a plurality of through holes, and the through holes of a first plate are spaced laterally from the through holes of a second plate.
- 16.(new) The filter device of claim 15, wherein the through holes have a diameter from 1-10 mm.
- 17.(new) The filter device of claim 16, wherein the through hole diameter is from 2-5 mm.
- 18.(new) The filter device of claim 15, wherein the through holes comprise a shape selected from a group consisting of circular, elliptical, triangular, square, rectangular, pentagonal and hexagonal.
- 19.(new) The filter device of claim 12, wherein the sieve plates include substantially an identical geometry.
- 20.(new) The filter device of claim 12, wherein the filter comprises a ceramic raw material.
- 21.(new) The filter device of claim 20, wherein the ceramic raw material includes reinforcing fiber.

- 22.(new) A method for producing a filter device comprising a bonded network of graphitized carbon, the filter device comprising a protruding frame joining a plurality of sieve plates, each plate including a corrugated surface, the protruding frame and sieve plates defining a reservoir chamber, the method comprising:
- a) pressing a semi-damp mixture comprising ceramic powder and a graphitizable bonding precursor and fibers to obtain a first and second perforated sieve plate, each plate having a disk shape, a protruding frame, and corrugated surface on at least one surface;
 - b) forming an assembly by joining the first and second perforated sieve plates by the protruding frames using a binder, whereby the plates and frame define a reservoir chamber;
 - c) firing the assembly in a non-oxidizing atmosphere to a temperature up to 1000°C.
- 23.(new) The method of claim 22, wherein the binder is selected from a group consisting of ceramic or carbon.
- 24.(new) The method of claim 22, wherein the non-oxidizing atmosphere is a reducing atmosphere.
- 25.(new) The method of claim 22, wherein firing occurs between 600-700°C.
- 26.(new) The method of claim 22, including roughening the corrugated surface.
- 27.(new) The method of claim 22, wherein the semi-damp mixture includes a graphitizable carbon bonding precursor.
- 28.(new) The method of claim 22, wherein the precursor is fired from 500-2000°C.